

ISSUES IN MILK PRICING AND MARKETING

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ABSTRACT

This paper discusses the economic, technological, and institutional factors which shaped the development of the milk marketing and pricing system, the nature of classified pricing, the determinants of the geographic structure of milk prices, the issue of undue price enhancement by cooperatives, the changing functions of milk marketing cooperatives, and issues ahead in milk pricing.

KEYWORDS: Milk, Marketing, Pricing, Cooperatives, Issues, Federal orders.

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Those who want more explanation of how the milk pricing system works can request: Milk Pricing (AER-315) from ERS Publications, Room 0054-South, USDA, Washington, D.C. 20250.

SUMMARY

For 100 years, marketing and pricing systems for fluid milk have had to adapt to basic economic and biological facts: (1) it is more costly to produce and market milk for fluid products than it is for manufactured products; (2) sanitary requirements in production and marketing of fluid products impose higher costs than for milk destined strictly for use in manufactured products; (3) milk for fluid use can be stored only briefly, requiring substantial reserves to meet fluctuating demands; (4) milk producers are small and numerous compared to distributors. They must organize to achieve power in dealing with distributors.

While these basic facts have not changed, the institutions of milk marketing and pricing have changed drastically as technology and economic conditions have changed. A differential between Class I and Class II milk prices must cover the additional costs of producing and marketing fluid grade milk. The additional production costs are now small, but the added marketing costs are on the order of 60 cents per hundredweight.

The present geographic structure of Class I fluid milk prices generally conforms to that which would be expected in a market where there was free movement of milk (i.e., no barriers). The transportation differentials in the Federal order minimum Class I prices were established in the sixties at approximately 15 cents per hundredweight per hundred miles with distance measured from Eau Claire, Wisconsin, in the heart of the upper Midwest surplus production region. Transportation costs at present are 20 cents per hundredweight per hundred miles.

In recent years, assertions have been made that prices charged by cooperatives were too high. The Capper-Volstead Act requires the Secretary of Agriculture to take action against a cooperative which has unduly enhanced prices. Equating all payments to cooperatives above the Federal order minimum prices to undue price enhancement ignores the additional services (not covered by the minimum prices) performed by cooperatives and the increase in transportation costs which is not reflected in the geographic structure of minimum Federal order Class I prices. A 1974-75 bulge in over-order payments was due to sharp drops in Federal order prices when feed prices were increasing rapidly and cooperatives were able to offset some of the cost-price squeeze on producers.

Cooperatives are performing many new functions today. They are balancing fluid milk markets and providing handlers, in many cases, with supplies tailored to their individual needs. There are substantial economies of scale in coordinating milk supplies, and these have changed the marketing relationships between processors and cooperatives.

The major issues in milk pricing and marketing can be summarized in terms of tradeoffs between market power and efficiency, efficiency and variety, and stability and instability.

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INTRODUCTION

This report deals with issues in milk pricing and marketing which concern dairy farmers and their organizations, milk processors and distributors, Federal and State governments, consumer groups, and individual consumers. After discussing the economic, technological, and institutional forces which shaped the development of the milk pricing and marketing system, this report discusses the nature of classified pricing, determinants of the geographic structure of milk prices, the issue of undue price enhancement by cooperatives, the changing functions of milk marketing cooperatives, and issues ahead in milk pricing.

THE DEVELOPMENT OF THE MILK MARKETING AND PRICING SYSTEM

From the earliest days of the development of city milk markets, the marketing and pricing system for fluid milk has had to adapt to several basic economic and biological facts:

1. It is more costly to produce and market milk for fluid products than it is for manufactured products.
2. The sanitary requirements in production and marketing of fluid products impose higher costs than for milk strictly for use in manufactured products. This is because the higher heat treatment used in manufacturing butter, cheese, evaporated milk, and other manufactured products kills the bacteria.
3. Milk for fluid use can be stored only briefly, compared to manufactured milk products. Therefore, substantial reserves of fluid grade milk are required in order to meet the fluctuating market demands. Reserves, in this sense, arise from production larger than daily needs for fluid milk production. Supply and demand do not fluctuate together either seasonally or in a shorter time frame.
4. Milk producers are relatively small and numerous. Milk distributors are much larger than individual producers and relatively few in number. Milk producers 100 years ago tried to organize for collective action in dealing with distributors. Unions, associations, cooperatives, and many other types of organizations were formed.

These facts were true over 100 years ago when city milk markets began to develop. The relative importance and the impacts have changed, but the basic facts have not.

In the earlier days, one of the most important problems arose out of the wide seasonal swings in milk production. The tendency was for producer prices to be very high when volume was short and very low when milk was plentiful. In the flush season, many farmers were unable to sell milk to fluid milk distributors. Both distributors and producers recognized this problem and various means were developed to deal with it. Producers would have been happy to settle for a flat price for all milk year-round, but distributors found that they lost money on the milk not needed for fluid products in the flush production season. When distributors made butter out of the surplus milk, they could not sell it for a high enough price to recover the cost of the milk. So, they cut off producers. This led to the development of a variety of pricing methods including classified pricing where the price received by the farmer is based on the use of the milk.

A classified pricing plan was first introduced in the Boston market about 1886. In 1897, seven contractors (wholesalers), who handled about three-fourths of the milk in the Boston market, used a classified pricing system which had been negotiated with the Milk Producers Union. In 1901, it was replaced by another plan which was essentially a base-rating plan under which the higher price was paid on a base quantity determined by the producer's past output. In 1918, a classified pricing program was reintroduced in the Boston market by the New England Milk Producers Association. A two-price plan similar to present classification was introduced in Minneapolis-St. Paul in 1918, in Baltimore in 1919, in Philadelphia in 1920, and in New York and Milwaukee in 1921.

In the twenties, classified pricing systems were established in nearly all major markets by bargaining between dairy farmer cooperatives and processors. The setting of price levels under classified price plans prior to public regulation was a matter of negotiation between the cooperative and handlers. Low-side constraints on prices were dictated by the need to obtain sufficient supplies of milk from producers to supply at least the Class I (fluid milk) needs of the market. Lower prices would not bring forth enough milk. On the high side, the negotiators were constrained by the fear of loss of sales due to rising prices and, probably more important, the need to avoid flooding the market with milk if producer prices got too high. Thus, supply and demand factors were not overlooked, but there was still a fairly wide range for negotiation.

During the thirties, these negotiated systems broke down in most markets, because depression conditions led to a drastic decrease in demand. Prices at all levels dropped sharply, and farmers were in great economic distress. Under the Agricultural Adjustment Act of 1933 and later legislation, the

Federal Government stabilized prices of milk in fluid milk markets through licenses, later replaced by marketing orders. ^{1/} Many States set up State milk control systems to perform similar functions. There was some fluctuation in the prevalence of State milk control and a continued expansion of Federal milk marketing orders as they were requested by producers through cooperatives in more and more fluid milk markets.

Marketwide pooling ^{2/} was as important as classified pricing. It ensured equal treatment to producers so that each one received a price reflecting the average class utilization in the market. It also removed an advantage to handlers who used more milk for fluid products than the average, putting handlers on an equal footing in dealing with producers. After World War II, cooperatives in a small number of markets began to bargain for premiums over order prices (prices higher than the minimum specified by the Federal order), which became fairly common in the late fifties. In some markets, these premiums were short lived; in others, they persisted for many years.

Fluid milk markets 30-40 miles apart were once separate and distinct markets with very little competition among them. Such isolation of individual fluid milk markets has broken down gradually over the years. Recently, such markets have merged, and cooperatives and processors in cities several hundred miles apart are increasingly in competition. Technological developments in transportation and processing methods, which provide longer shelf life for fluid products, have made it possible to move bulk and packaged milk over much greater distances. Bulk milk now moves as far as 2,000 miles, and packaged milk 200-250 miles. Under such circumstances, bargaining in individual markets has become increasingly difficult.

While the basic biology of milk production remains unchanged, increased understanding of it has made possible many modifications in production practices. Seasonality of production is very much less than it used to be, largely because economic incentives have been provided to persuade dairy farmers to adopt modified production practices. Developments in genetics, animal nutrition, and labor-saving machinery have made possible much greater output per cow, per ton of feed, and per manhour.

^{1/} A Federal milk marketing order is a legal instrument issued by the Secretary of Agriculture under authority of the Agricultural Marketing Agreement Act of 1937 which requires milk processors to pay at least specified minimum prices for milk.

^{2/} Under marketwide pooling, all processors (called handlers) pay the same class prices for the milk which they use. The funds are put into the pool, from which all producers receive the same basic price (but with differences for location of the farm...i.e., how far it is from the market) for their milk. The other kind of pooling arrangement is individual handler pooling, where producers receive a price based on the distribution ("utilization") of milk between classes (i.e., between fluid milk products and manufactured milk products) of the individual processor to whom they sell.

Technological developments in processing, refrigeration, and transportation have destroyed the isolation of local milk markets.

CLASSIFIED PRICING

A classified pricing system by definition raises prices of milk for fluid use (Class I) and lowers prices for manufactured products (Class II). There is only one point of view on this matter. But, a frequent disagreement occurs over the magnitude of the differentials. It is sometimes assumed that the entire difference between the Class I and Class II prices represents price discrimination. This is not so.

Much of this confusion arises out of discussing the average price as the price. This kind of oversimplification, while rhetorically convenient, obscures the fact that milk prices, like the prices of practically all other goods and services, come in a wide variety of shapes and sizes. In other words, we must think in terms of structures of prices, not of the Class I price or the Class II price.

On the average, for the entire Federal order system in 1975, Class I prices averaged \$9.36 per hundredweight while Class II averaged \$7.65 per hundredweight. But this difference of \$1.71 per hundredweight is an average of differentials ranging from 90 cents in northwestern Wisconsin to \$3.15 in Miami.

The base zone differential in northwestern Wisconsin of 90 cents per hundredweight reflects, in addition to the proceeds of economic price discrimination, if any, whatever additional costs are incurred by milk producers in meeting the sanitary requirements for Grade A production compared to manufacturing grade milk production. 3/

Any pricing system for milk meeting the sanitary requirements for fluid use must recognize and deal with the basic fact that milk which is indistinguishable at the farm is no longer the same when it reaches the plant.

Beyond the farm level, there are significant costs in supplying milk to fluid milk processors which are not incurred when supplying milk to manufacturers of butter, cheese, and nonfat dry milk. Transportation, the most obvious and significant of these costs, appears as a separate item under the Federal milk marketing orders and is reflected in the Class I and blend prices. 4/

Other costs unique to providing milk to fluid milk processing plants arise out of the need to provide that milk in the form and on the schedule desired by the processor. This form and fluctuations in production which are not matched

3/ Manufacturing grade milk does not have to meet such high sanitary standards as Grade A milk (for use in fluid milk products). It can only be used for products such as butter, cheese, nonfat dry milk.

4/ Average prices paid to producers.

by fluctuations in demand for fluid milk products are easily recognized. More significant but less easily recognized are the within-week variations. No fluid milk bottling plant operates 7 days per week. Few operate 6 days per week. Yet, cows produce milk every day. The needs of fluid milk bottling plants reach a peak on Thursday and Friday to provide milk for the weekend bulge in food shopping. The very significant costs of providing this kind of service must be covered by any pricing system, whether or not it takes the form of the present classified pricing system. Current estimates of these costs for average situations are about 60 cents per hundredweight (table 1). But, as table 1 indicates, these costs vary widely.

Price discrimination in the economic sense consists of selling identical products in two markets at different prices. Class I and Class II milk are identical only in a chemical sense. To be identical in the economic sense, they must be equivalent in space, form, and time utility. They are not.

THE GEOGRAPHIC PRICE STRUCTURE

In a set of markets with a free flow of bulk milk for use in fluid milk products—i.e., no governmental or private restrictions—the geographic structure of prices would reflect supply and demand conditions in each market (and all markets aggregated) and the costs of transporting bulk milk between markets. The lowest price (the base price) would be found in the largest surplus production area (surplus to local needs) and prices in all other markets would be higher by the cost of transportation from the base market, except (1) in those markets with surpluses above their own needs which could not be disposed of for fluid use without taking a reduction from the base-zone-plus-transportation price, and (2) in at least some of the deficit markets receiving milk from such secondary surplus sources.

If all markets other than the base market had no surpluses, their prices would be base-zone-plus-transportation.

This is the general type of structure of Class I prices which exists in the United States. The major area of surplus production is in the upper Midwest. Other significant surplus areas are the Northeast—centered in New York and Pennsylvania—and the Pacific coast. Under these conditions in a competitive market, Class I prices would be at base-zone-plus-transportation everywhere except in the Northeast and on the west coast.

Individual farmers' costs vary by size, location, efficiency, land quality, and when the farm was bought, along with many other variables. In a recent Economic Research Service (ERS) study of nearly 1,600 dairy farmers throughout the country, production costs varied from less than \$5 to over \$13 per hundredweight (fig. 1) (2). 5/ In each of the 24 different areas around the

5/ Underscored numbers in parentheses refer to items in the list of references at the end of this report.

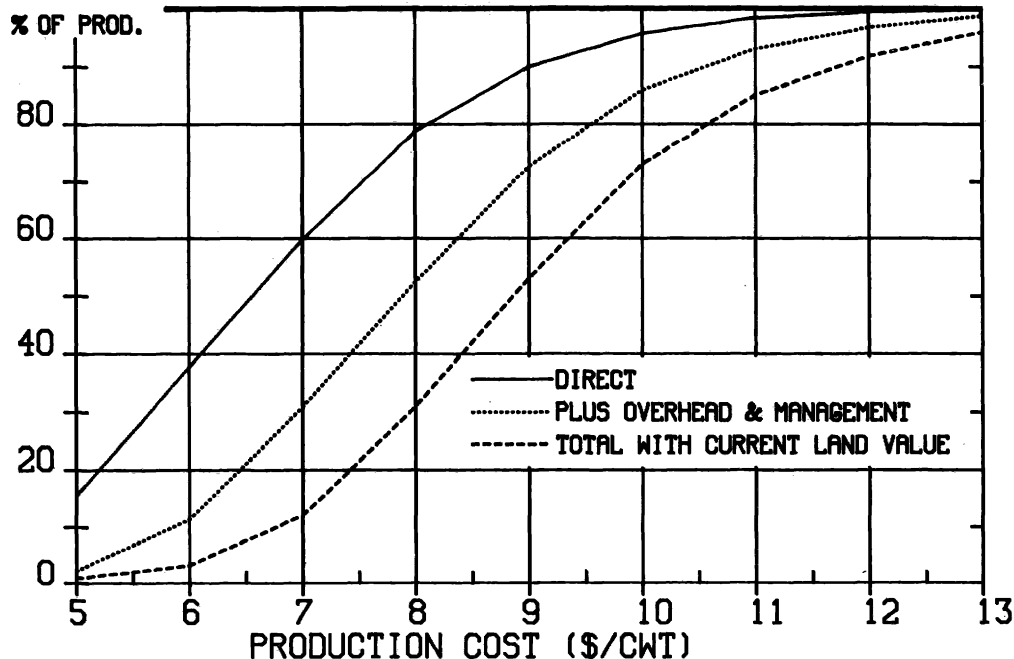
Table 1--Average additional intramarket costs of providing bulk milk to the fluid market 1/

Item	Cost per cwt		Milk on which cost is incurred	Milk which can be charged	Effective additional cost per cwt on milk shipped to fluid market
	on milk to which applied:				
	Average	Range			
	-----Cents-----		----Percent-----		-----Cents-----
Health and quality inspection, permits	3	2-4	100	60	4
Market administrator fees	3.5	2-5	100	60	5
Handling cost of reserve:					
Seasonal	18	10-600	27	60	8
Daily	34	10-300	17	60	10
Storage <u>2/</u>	*	0.5-10	*		2
Receiving and reshipping	6	4-12	18	60	2
Transportation <u>3/</u>	14	0-60	60	60	14
Shrinkage	5	*	60	60	5
Give-up <u>4/</u>	10	*	60	<u>60</u>	<u>10</u>
Total				60	60

*Highly variable. 1/The costs represents the average additional costs of providing milk to fluid processors above the cost of the milk delivered to a manufacturing plant in the milkshed. These costs are incurred by firms providing bulk milk to fluid processing plants rather than to manufacturing plants. In the long run, unless they are reimbursed, either directly or indirectly, the milk will tend to go to manufacturing rather than to fluid use. These costs are U.S. averages. They are not marginal costs in a specific fluid market. At the margin of the fluid supply area, the marginal cost will be greater, although some of the components will be lower. 2/Extra storage costs personally estimated by researchers after discussion with plant personnel. 3/ Excludes transportation costs covered by the transportation allowance under Federal orders. The profits given up by a manufacturing plant when it ships milk to a fluid milk plant instead of processing and selling the milk itself. 4/ Highly variable upward depending upon immediate circumstances. Source: Floyd A. Lasely, Econ. Res. Serv., U.S. Dept. of Agri.

CUMULATION OF MILK PRODUCTION BY COST LEVELS

ALL SUBREGIONS



USDA

NEQ.ERS 2464-76(05)

Figure 1

country for which figures were computed, the range in costs was \$5 per hundredweight or more. The supply curves that economists draw look much like those in figure 1: as prices rise, in any given area, more milk will be produced because more farmers can make money producing it.

But costs vary from one area to another. Corn grows better in the Corn Belt than most other places. So, it is cheaper there. Cows produce better in cooler weather than in hot. Pastures grow better in some climates than in others. Putting all these and many other factors together, production costs tend to be lower in the upper Midwest than anywhere else and highest in Florida. That is why supplies are large in the upper Midwest and tight in Florida. The geographic structure of Class I milk prices must be designed to deal with these facts.

The present intermarket structure of Federal order minimum Class I prices was established in the sixties. The transportation differential was 15 cents per hundredweight per 100 miles with distance measured from Eau Claire, Wisconsin, in the heart of the upper Midwest surplus production region. This reflected the costs of long-haul movement of bulk milk at that time (4; 6; 7). Transportation costs have risen rapidly since then, due to higher trucking costs, especially fuel and labor. Current transportation costs are about 20 cent per hundredweight per 100 miles (1, 3, 5).

UNDUE PRICE ENHANCEMENT

The Capper-Volstead Act permits farmers to act together in marketing without violating the antitrust laws. But, it is not a blanket exemption from such laws. A provision of that Act requires the Secretary of Agriculture to take legal action against a cooperative which has unduly enhanced prices. Once farmers have joined together in a cooperative, they are subject to the remaining antitrust and fair trade laws just as any other firm. The exemption does, however, permit the formation of cooperatives that have elements of a monopoly in the marketing of a particular commodity for a particular market.

Provisions of Section 2 of the Act are intended to provide safeguards to prevent abuse of the monopoly power. Section 2 provides that, if the Secretary of Agriculture has reason to believe that any association monopolizes or restrains trade to such an extent that the price of any agricultural product is unduly enhanced, he is to serve a complaint on the association. That complaint includes a notice of a hearing at which the association shall be required to show cause why it should not be directed to cease and desist from such monopolization or restraint of trade. The Act authorizes the Secretary to take action against the monopolization or restraint of trade activity only. It does not authorize the Secretary to establish a reasonable price nor does it give him the alternative of ordering the association to reduce its prices.

How does one know prices have been enhanced? How does one know that prices are too high? Looking at the prices themselves will provide no answer. An analytical framework--a set of standards--is needed. Operational standards for judging whether or not prices are too high are provided by looking at the consequences of prices higher than those justified by economic conditions. Consequences must be viewed over a period long enough to separate the results of transitory events from those more nearly reflecting the conditions of the market being studied.

If the supply of the agricultural commodity in question is controlled, the consequence of prices that are too high for economic conditions will be excess profits to those exercising control over supply or benefiting from it. If the supply is not controlled, prices that are too high will stimulate excess production.

It is sometimes argued that the reason that we do not get overproduction as a result of prices that are too high is that the alleged excess profits received by milk producers as the fruits of the existing milk pricing system are capitalized into the value of land. This is an application of the well-known economic principle that excess profits resulting from a restriction on output will be capitalized into the value of the scarce resource. It obviously applies in the case of quotas such as acreage allotments which are tied to the land. In the case of tobacco allotments, the difference in the price of a farm with and without a tobacco allotment is large.

A system which restricts milk production--such as the Class I base plans used in a few markets--does result in a capitalized value of the right to sell in a market. Where "base" or "quota" can be sold separately from the land, as in

California, these rights to sell have a substantial value which is separate from that of the land.

But the general case in U. S. markets is that there are no such restrictions on the right to sell. There are no restrictions on milk production in any area of the United States. Under these conditions, if significant excess profits were generated by prices which are too high for economic conditions, production would rise within 2 to 3 years, long before any major portion of the excess profits could be capitalized into land values as farms are sold. Dairy farms are not resold often enough to make such a process possible.

In 1976, a petition was filed with USDA charging undue price enhancement by milk cooperatives. The Department found that:

Federal order prices are minimum...in law and fact.

Cooperatives are performing additional services not covered by minimum prices.

The 1974-75 bulge in overdue payments was due to sharp drops in Federal order prices when feed prices were increasing rapidly...and cooperatives were able to offset some of the cost-price squeeze on producers. 6/

The problem of prices that may be too high for economic conditions will remain with us, in both the legal and the policy sense. It can only be dealt with effectively by careful analysis of each situation in which the test is the consequences--do apparently high prices result in surpluses? A search for a rule or absolute standard which can be applied automatically to the prices of milk or any other product to determine whether undue price enhancement exists is doomed to failure. There are no such standards under any provision of the antitrust laws; the rule of reason applies in all cases.

PRICE MOVERS

Any discussion of milk pricing must recognize the interdependency of the entire milk marketing and pricing system. As we have already seen, a system somewhat like the existing classified pricing scheme is mandated by the biological and economic facts of milk production and marketing in order to provide a method to equate varying supplies and demand for fluid milk products. Under such a system, manufactured dairy products are the residual use of milk supplies. Fluid milk products return the higher price to producers and have first claim on supply. Semiperishable products, such as ice cream, cottage cheese, sour cream, and yogurt, may be made from either local milk supplies or intermediate products shipped from surplus areas. Hard products such as cheese, butter, and powder are residual claimants on milk

6/ If cooperatives had not existed or been unable to obtain over-order payments, there would have been no relief for producers.

supplies. The relative price of milk for these products determines the allocation of milk among the uses. Thus, in analyzing any milk pricing problem, its impact on the entire dairy production and marketing system must be considered.

The price of manufacturing grade milk reflects competitive conditions in the marketplace, including impacts of price support actions, costs of milk production, alternative farm and nonfarm employment opportunities, demand for manufactured milk products, and, indirectly through its effect on the quantity of milk used, demand for fluid milk products.

Since the early sixties, Class I prices have moved up and down with changes in the average price paid for manufacturing grade milk in Minnesota and Wisconsin. Good measures of manufacturing milk prices have been relatively easy to obtain and have provided a sensitive measure of changes in the overall supply-demand balance in the dairy economy.

This system worked well in the 1960's and the early 1970's. But events since 1973 raise substantial doubts as to its adequacy for the long term. Violent fluctuations in the Minnesota-Wisconsin series reflected the short-run supply and demand conditions but sent very bad signals to producers, handlers, and consumers as to what to expect in the near future. Attempts at anti-inflationary controls accentuated the problem by driving down producer prices when feed costs were extremely high.

At a time when feed prices were skyrocketing, the bottom fell out of milk prices. Within a few months, the situation turned around and milk prices rose nearly as sharply as they had dropped. This does not reflect good performance for a pricing system intended to provide a measure of stability.

Much of the stability which existed for 20 years up until 1973 was provided by the large stocks of feed grains in the hands of the Commodity Credit Corporation which kept feed, the major cash expense of dairy farmers, relatively stable in price. With the excess grain stocks gone, this major source of stability in the livestock economy disappeared. CCC stocks of dairy products were another source of stability.

While the Minnesota-Wisconsin price fluctuated sharply in 1973-75, relative stability returned in 1976 with the rebuilding of commercial inventories and an increase in CCC stocks. The same situation prevails for 1977.

CHANGING COOPERATIVE FUNCTIONS

As milk marketing changed over the years, the functions performed by cooperatives changed drastically. About three-quarters of all milk was home delivered on a 7-day per week schedule in the thirties. Delivery changed to every other day during World War II, to three times a week in the late fifties and early sixties and to once or twice a week in the seventies. The share of home-delivered milk dropped 50 percent in the mid-fifties and stands at 10 percent today. Milk sales shifted to retail stores, primarily supermarkets. Sales have bunched up on the weekend when most family shopping is done.

Fluid milk processors shifted from the 6- or 7-day per week schedules of the thirties to the 4- or 5-day schedules common today.

In the thirties and forties, the typical situation was for fluid milk processors to perform all the marketing functions, starting with picking up the milk at the farm and ending with its delivery to the customer's doorstep. With sales about the same every day of the week, the major problem was seasonal balancing of supplies during the flush season.

Many handlers have accepted full supply arrangements with a cooperative because of the high cost of procuring and coordinating a fluctuating supply to meet a variable demand and the possibility of eliminating some uncertainty in this area. Under such an arrangement, the cooperative undertakes to supply the exact needs of the handlers for milk for fluid use and perhaps for ice cream and cottage cheese, and also to make arrangements for the milk not needed for fluid products, either by manufacturing butter, cheese, powder, and other products in its own plants or selling the milk to others. Milk supply varies from day to day, depending on the vagaries of production by individual cows, weather, road conditions, and other uncontrollable factors. Demand likewise varies from day to day, partly on the basis of the day of the week, since more and more milk is being sold through supermarkets with a concentration of sales on weekends. Thus, there is a strong element of random variation in both supply and demand from day to day. The larger the volume under the control of a single agency, such as a cooperative, the more the random variations tend to offset one another.

A single-agency arrangement does not eliminate fluctuations, but it does reduce their impact on the handler by giving him a relatively simple, routine means of adjusting supply to demand with a minimum effort and expense. Furthermore, a single agency is in a better position to make necessary adjustments and reduce the burden of uncertainty.

As cooperatives increasingly take over the task of coordinating supply and demand under full supply contracts or some similar arrangement, substantial economies become possible. Reserve supplies of milk, which must be carried to meet fluctuations, become smaller. Significant savings become possible in the movement of milk, both in farm assembly and in movement to plants, when one agency is routing the total supply of the market. The function of manufacturing supplies of milk not needed for fluid use into various dairy products can be performed much more efficiently under such a system, since receipts of milk are not nearly as variable at a single plant receiving the surplus from an entire market. When each handler attempts to take care of his own surplus, tremendous variations occur from day to day in the volume being manufactured. Total economies in such a centralized supply-coordination and surplus-disposal operation, compared with a system in which the handler manages his own supply and surplus disposal, probably are 40-50 cents per hundredweight. Potential gains from such arrangements will be shared between cooperatives and processors in some proportion, depending on the relative bargaining strength of each. The economies are substantial enough so that both cooperatives and handlers can make substantial savings.

These functions, formerly performed by processors, are largely performed by cooperatives today. Significant costs formerly borne by the processor are now borne by the cooperative. Federal order minimum prices do not include provision for these services. It is a formidable task to define such services and establish appropriate charges.

The existence of substantial economies of scale in coordinating milk supplies has changed the marketing relationships between processors and cooperatives.

ISSUES AND TRADEOFFS

Public policy decisionmaking relating to milk prices must deal with at least three sets of choices or tradeoffs: Market power vs efficiency, efficiency vs variety, and stability vs instability.

Market Power versus Efficiency

The efficiencies that go with size in bulk milk are significant. This is one of those cases where more competition—i.e., more competitors—will raise costs rather than lower them. The lowest costs will be obtained when one firm handles the entire job of supply coordination for a market. That, of course, is a monopoly.

The larger the organization is, the more market power it has. Increasing the size of the organization decreases the freedom of choice which others have. If all producers are required to be members of the organization in order to sell milk, they have no freedom to choose not to belong. And handlers have no freedom to choose to buy milk from other organizations.

One likely result of this situation is that the effective policy (regardless of what the rhetorical policy may be) will foster fairly large cooperatives but not to the extent that it will wipe out all smaller organizations or deny producers the opportunity to deal individually with handlers. This would allow the large cooperative to capture a substantial share of the economies of scale possible in a market without eliminating all freedom of choice. In such a case, which is typical of many milk markets today, the cooperative bears most of the costs of balancing milk supplies with needs of handlers. But nonmembers bear no share of the costs. This is often known as the free-rider problem. The problem is much more serious than it was 10 or 20 years ago because the costs of balancing have increased greatly for reasons already discussed. Legal and economic considerations have limited adopting provisions in Federal orders to compensate organizations from pool funds for carrying out this function except in the New York-New Jersey market.

Efficiency versus Variety

Fewer products generally mean greater efficiency, lower production costs, and lower consumer prices. But a small number of products means that the range of consumer choice is restricted—less variety is offered to meet consumer wants.

Since not all buyers have the same wants and needs regarding both product and price, the general level of satisfaction with the performance of a market can be expected to increase as diversity of both product and price increases, up to some point. As with most other measures which attempt to provide some insight into performance, the optimal level of performance is presumably somewhere near the middle of the range of possible outcomes.

In markets for fluid products, results of the price-making process are more aptly considered in terms of price structures than of prices. There is no one price in a market. At the retail selling level, prices vary not only by type and size of container, but often also between store and processor labels; sometimes between primary and secondary brands under store or processor label; between supermarkets, convenience stores, dairy stores, and small grocery stores; and often within these groups. There may be as many as 26 different retail-store selling prices of fluid milk in a market and as few as four (8). A small number of these price differences are related to actual variations in physical characteristics of fluid milk—butterfat content, grade, vitamins added, etc. Some are cost-related, but more typically, they reflect different merchandising policies of retailers.

Some of the effects of the kind of choice which is available in retail markets for milk can be seen in a comparison of the changes in retail prices for whole milk over a 20-year period. If there had been no change in the proportions of milk going through different marketing channels (home delivery versus store) and the switch from small to large containers had not occurred, the average retail price of whole milk would have increased 88 percent between 1954 and 1974. This is, incidentally, very close to the usual price index computation. Given all the changes from home delivery to store sales and from quarter to half gallons and gallons, the average price of whole milk as purchased by consumers actually increased only 75 percent over this period. Thus, it is obvious that choices which were open to consumers made it possible for them to switch to lower-cost sources and forms of milk and many did so.

On the other hand, at any given moment, marketing costs could be minimized by reducing the variety of packages and outlets. The tradeoff, then, is between variety and efficiency.

Extending the analysis beyond whole milk, we must consider how much variety in the forms of milk which are available on the market is desirable. The products available today include whole milk, 1-percent and 2-percent low fat milk, skim milk, nonfat dry milk, evaporated milk, and condensed milk. All these products can substitute one for the other. The present structure of prices means that a cup of something which we might call milk for drinking, baking, or making hot chocolate can be obtained in a wide range of prices. This is in part a result of the existence of the classified pricing system.

It is sometimes said that the classified pricing system as administered under Federal orders imposes a cost on consumers through the restriction on the reconstitution of powder and butterfat in commercial processing plants. This is because a handler who reconstituted milk in this fashion would have to pay the equivalent of Class I prices for the ingredients. But much of the alleged advantage of reconstituted milk would disappear without a classified pricing

system. As a matter of fact, reconstituted milk would usually be more expensive than fluid milk if the raw product from which both were made were priced at the same rates, except in markets quite distant from the Upper Midwest. Although shipping costs for powder and butterfat are lower than for fluid milk, the processing cost to remove the water and then put it back could be more than the saving in transportation costs.

The way the system now operates, the consumer can reconstitute a skim milk product at substantially less cost than the packaged product but at some inconvenience. If one could eliminate the classified pricing system, this choice to consumers would disappear.

Thus, the classified pricing system provides a benefit to consumers because the variety of dairy products is available to them at different prices. More efficiency with fewer products would provide less freedom of choice for consumers.

Stability versus Instability

Complete stability would mean that things could never change for the better or the worse. Extreme instability is equally undesirable with prices changing every day or several times a day. The optimum level of stability is somewhere in between. The task is to search out those policy decisions and institutional arrangements that will move the result closer to the optimum.

The tools of economics do not give us the means to fully measure the costs and benefits of stability. This is because our theory is static while the real world is dynamic. An unstable world creates substantial stresses in adjusting to changing conditions, as was demonstrated by consumer complaints about food prices in 1973 and 1974.

There are other costs of instability. If prices and incomes in any line of business including dairy farming vary widely from year to year, that line of business becomes less attractive to those who are thinking about entering it. Average profit rates must be higher to compensate for the year-to-year variability. That means that, in the long-run, prices will be higher. If the existing institutions which provide considerable stability on the downside in milk prices were to be removed, the boom-and-bust cycle which characterized dairy farming before these institutions were invented would reappear. Given the very large investments now required to enter dairy farming, there is a very good question as to whether production would ever return to a level which would yield prices comparable to those we now have. It is not impossible that the cycle would operate around a sharply declining trend as dairy farmers went bankrupt when prices were low and were not replaced as prices rose. Alternatively, production might recover but only under very different arrangements, such as contract production in broilers.

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